

**TRANSMISSION AGENCY OF
NORTHERN CALIFORNIA
(TANC)**

**WILDFIRE MITIGATION PLAN
FOR THE
CALIFORNIA-OREGON
TRANSMISSION PROJECT**

**INDEPENDENT EVALUATION
REPORT**

OCTOBER 23, 2019

DISCLAIMER

California Senate Bill 901 (SB 901) mandates that local publicly owned electric utilities or electrical cooperatives shall, before January 1, 2020, prepare a Wildfire Mitigation Plan (WMP or Plan). Additionally, each publicly owned electric utility and electrical cooperative is required to contract with a qualified independent evaluator with experience to assess the comprehensiveness of its WMP.

TANC has requested Grid Subject Matter Experts (“GridSME”) to conduct a review and assessment of TANC’s WMP for the California-Oregon Transmission Project (COTP) to ensure it meets the requirements outlined in SB 901. GridSME’s review and assessment is based on TANC’s COTP WMP report alone and evaluates only the comprehensiveness of the COTP Plan as it is written.

The information provided in this review and report represents GridSME’s analysis based only on the information available at the time the review was conducted. GridSME is not responsible for the success or failure of TANC’s projects nor any potential ignition resulting therefrom. GridSME makes no representations or warranties expressed or implied regarding the reliability or thoroughness of TANC’s COTP WMP. Recipients of the assessment report assume all liabilities incurred by themselves, or third parties, resulting from their reliance on the report, or the data, information, and/or assessment contained therein.

INTRODUCTION:

Pursuant to California SB 901 and Section 8387 of the Public Utilities Code PUC as approved by Governor Jerry Brown on September 21, 2018, “Each local publicly owned electric utility and electrical cooperative shall construct, maintain, and operate its electrical lines and equipment in a manner that will minimize the risk of wildfire posed by those electrical lines and equipment”. They will prepare a wildfire mitigation plan before January 1, 2020 and contract with a qualified independent evaluator with experience in assessing the safe operation of electrical infrastructure to review and assess the comprehensiveness of its wildfire mitigation plan. The independent evaluator shall issue a report that shall be made available on the internet website of the local publicly owned electric utility or electrical cooperative and shall present the report at a public meeting of the local publicly owned electric utility’s or electrical cooperative’s governing board.

Overview:

The Transmission Agency of Northern California (TANC) is a joint powers agency comprised of 15 publicly owned utilities (POU) and irrigation districts (Members) located throughout northern and central California. TANC’s mission is to assist its POU members in providing cost effective energy supplies to their customers through long-term ownership or contracts for service over its high voltage transmission line within California and the western United States.

To support this mission, TANC constructed the COTP, a 339-mile 500 kilovolt (kV) transmission line and related facilities that extend from the California-Oregon border to central California. TANC does not own or operate any distribution facilities and has no retail customers. TANC is the primary owner and project manager of the COTP, is subject to direct oversight by the TANC Commission and contracts all maintenance and operations responsibilities to the Western Area Power Administration (WAPA).

To comply with PUC section 8387(3)(c), TANC engaged the services of GridSME to perform an Independent Evaluation (IE) of their COTP WMP to review and assess the comprehensiveness of the written Plan. GridSME is a Folsom, California based Limited Liability Corporation and is comprised of highly experienced electric industry professionals. Included among the areas of expertise of the GridSME professionals are wildfire mitigation, system operations, power engineering, grid interconnections, grid technology, cyber security, regulatory compliance, and electricity markets.

INDEPENDENT EVALUATION:

Following a review of TANC's written COTP WMP, GridSME has concluded that it meets all the requirements of PUC section 8387 and is comprehensive. GridSME's evaluation of TANC's COTP WMP was based only on a review of the written Plan and not an audit of all the programs, processes and procedures. Additionally, GridSME met with the TANC Ad Hoc Wildfire Advisory Committee to review and approve the Plan prior to final approval by the TANC Commission.

TANC has defined their wildfire mitigation programs within six key areas, including:

- Plan Overview and Objectives,
- Roles and Responsibilities,
- Risk and Risk Drivers,
- Prevention, Mitigation and Response Strategies,
- Disabling Reclosers, De-energization and Re-energization, and
- Plan Evaluation and Metrics.

Plan Overview and Objectives

The COTP is a critical transfer path rated at 1,600 megawatts of transmission capacity between California and the Pacific Northwest. It is the newest component of the 500 kV California – Oregon Intertie and plays a key role in fulfilling the energy and reliability needs of customers in California and the Pacific Northwest. This 339-mile line traverses varied terrain with about 1.3% of the line within the High Fire Threat

District (HFTD) Tier 3 (Extreme Fire Threat Area) and approximately 34.3% in HFTD Tier 2 (Elevated Fire Threat Area). TANC's primary objective is to operate and maintain the COTP in a safe and reliable manner and minimize the risk of TANC facilities being the origin of, or a contributing source for the ignition of a catastrophic wildfire. The primary objectives of TANC's COTP WMP are adequately defined throughout the Plan and are documented as:

- Minimizing sources of wildfire ignitions from the COTP,
- Minimizing wildfire spread rates,
- Maintaining the resiliency of the bulk transmission grid,
- Progressively applying the most effective wildfire prevention and mitigation strategies, and
- Annually improving overall Plan effectiveness.

Roles and Responsibilities

TANC is a joint powers agency and consists of 15 project members. Each project member assigns one delegate to form the TANC Commission, which provides governance, management, and conducts TANC's activities. All TANC decisions are made by the TANC Commission except for those decisions specifically delegated to the TANC Chair, TANC General Manager, TANC Assistant General Manager, or other TANC committees or officers as delegated by the TANC Commission.

Although TANC has full responsibility for compliance with and implementation of the COTP WMP, WAPA is the operations and maintenance agent for the COTP. WAPA, per contract agreement, supports several wildfire-related preventative strategies as described throughout TANC's COTP WMP.

Risk and Risk Drivers

TANC relies on two methods of identifying risks associated to their facilities. One relies on WAPA's Reliability Centered Maintenance approach – a systematic approach to evaluate equipment and resources and identify, eliminate or control potential

problems prior to failure. The second approach relies on the experience and expertise of operations and maintenance personnel to identify the fire risks and risk drivers associated with the COTP. TANC used the Bow Tie method (Figure 1) to visually show their identified risk drivers and risk consequences. TANC developed their COTP WMP mitigation programs based on these identified risks:

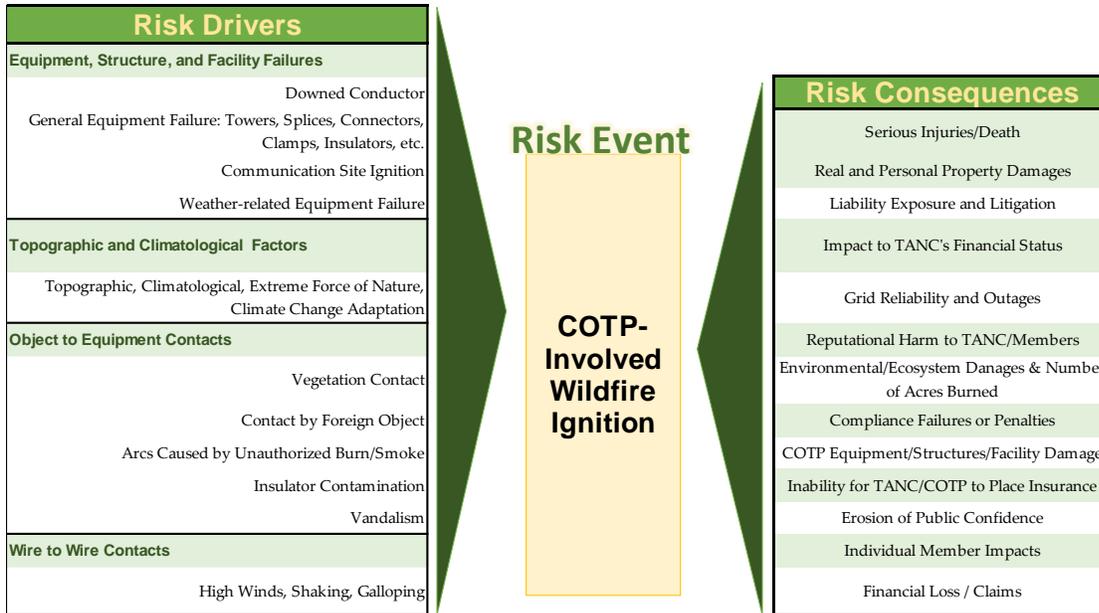


Figure 1 - Risk Event Bow Tie Method

Prevention, Mitigation and Response Strategies

In order to support its mission to operate their line in a safe and reliable manner, TANC has developed a comprehensive plan for mitigating the risk of the COTP facilities being an ignition source for a fire. The Plan also outlines numerous fire prevention strategies and responses applied during critical fire weather events.

The COTP has been very reliable with no incidents contributing to a wildfire. This reliability can be attributed to TANC's strict adherence to California Public Utilities General Orders (GO's) for inspection and maintenance of their facilities (GO 95, 165, 174, etc.) and vegetation management program. TANC conducts time-based aerial and ground patrols to proactively identify any potential risks of failure and mitigate them to ensure the safe and reliable operation of the transmission line. TANC also partners with fire agencies who provide fuel reduction and access road maintenance programs and services.

Over the next three years TANC will evaluate new technologies, such as drones and various camera technologies, to support their existing programs with the goal of enhancing the overall safety and effectiveness of all their fire risk mitigation programs.

Disabling Reclosers, De-energization and Re-energization Protocols

As previously mentioned, the COTP is a 339-mile 500 kV transmission line that runs from the California-Oregon border to Tracy, CA. Approximately 1.3% of the line is within the HFTD Tier 3 (extreme fire threat), 34.3% within the HFTD Tier 2 (elevated fire threat), and the remaining 52.7% outside the HFTD. Although the majority of the line is outside the HFTD, WAPA — the COTP operating and maintenance agent — has well established protocols for disabling (turning off) reclosing, or, as a measure of last resort, de-energizing the line when critical fire weather conditions or other hazards exist and could threaten the reliability or integrity of the COTP and public or employee safety.

TANC provides only transmission services and has no retail customers served at the distribution level. TANC has well-established communication protocols for notifying grid interconnected entities that may be impacted by a COTP public safety power shut off.

Plan Evaluation and Metrics

TANC's COTP WMP summarizes the metrics that will be used to measure outcomes for their Plan within the context of its risk assessment framework. It includes the wildfire risk event and drivers, the corresponding annual metrics to be used, and how the metrics are intended to focus on outcomes that directly reduce wildfire risk events and/or risk drivers. TANC will use all available data to evaluate the effectiveness of their COTP Plan and continue pursuing opportunities for improvement.

Summary

TANC's goal is to comply with California SB 901, Section 8387 of the PUC and to operate its electrical line and equipment in a manner that will minimize the risk of wildfire posed by its electrical line and equipment. Following a review of TANC's COTP WMP, GridSME has concluded that their plan is comprehensive and meets the requirements of PUC 8387.